

Abstract

Liquid distributor for two liquid phases to be uniformly distributed into a plurality of tubes of an upright tube-bundle reactor for carrying out chemical reactions, wherein the inside of the tubes forming the tube bundle are provided for a trickle-bed operation, the tubes are retained at the top and bottom by tubesheets and are closed against the outside of the tube, a distribution chamber is arranged above the upper tubesheet, which chamber contains feed pipes for two different liquids and at least one gas phase, wherein a first liquid distribution system is arranged directly above the tubesheet or on it, which system is connected to at least one outer feed device and contains an annular weir installed outside the tubed area, with openings at the bottom and a plurality of inlet sleeves, wherein one inlet sleeve is assigned at the top to each of the tubes of the tube bundle, the inlet sleeves are of tubular design and are vertically aligned, and the said sleeves have at least one lateral and one further opening located above the tubesheet and are open at the bottom facing each assigned tube in the tube bundle, and wherein a second liquid distribution system is arranged above the first liquid distribution system, which system is connected to at least one other outer feed device and contains one upper and one lower distribution tray, wherein the lower distribution tray contains a plurality of openings which are arranged flush above the inlet sleeves of the first liquid distribution system, and exhibits at least one device for setting a uniform liquid level above the openings, wherein the upper distribution tray is connected to the feed device for liquid, and contains a plurality of overflow weirs from which the liquid is able to discharge into the lower distribution tray, and wherein each of the overflow weirs is assigned to a plurality of openings of the lower distribution tray.

(To be published together with the abstract: Fig. 2)